

Warmup!

1. Find the inverse.

$$\begin{bmatrix} -3 & 4 \\ -5 & 5 \end{bmatrix} \xrightarrow{D=5} \frac{1}{5} \begin{bmatrix} 5 & -4 \\ 5 & -3 \end{bmatrix} \rightarrow \begin{bmatrix} 1 & -\frac{4}{5} \\ 1 & -\frac{3}{5} \end{bmatrix}$$



2. Write a matrix equation and solve.

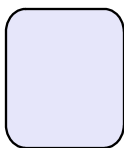
$$x + y + 3z = -12.5$$

$$-2x + 6y - z = 4$$

$$5x + 2z = 0$$

(2, .5, -5)

$$\begin{bmatrix} 1 & 1 & 3 \\ -2 & 6 & -1 \\ 5 & 0 & 2 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} -12.5 \\ 4 \\ 0 \end{bmatrix}$$



$$\begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} \phantom{0} \\ \phantom{0} \\ \phantom{0} \end{bmatrix}^{-1} \begin{bmatrix} -12.5 \\ 4 \\ 0 \end{bmatrix}$$

## Ch 4 Test (Thursday)

### 4.1-4.8 (not 4.4)

4.1--Organizing data, terminology

4.2--Operations (+, -, scalar mult.)

4.3--Multiplying Matrices (word problems)

$$3 \begin{bmatrix} 9 & 21 \\ 6 & 34 \end{bmatrix}$$

4.5--Determinants (2x2, 3x3, area, expansion by minors)

4.6--Cramer's Rule

$$x = \frac{D_x}{D}$$

$$\begin{bmatrix} + & - & + \\ + & - & + \end{bmatrix}$$

4.7--Identity, Inverse, decoding messages

4.8--Solving systems using matrix equations

Show Inverses

$$A \cdot B = I$$

$$B \cdot A = I$$

## Review Problems (HW)

p209-214

1, 3, 6, 7, 11, 15, 18, 20, 21, 28, 30,  
33, 37, 38, 40, 42, 47, 48

\*\*\*\*Look at example 3 on p169